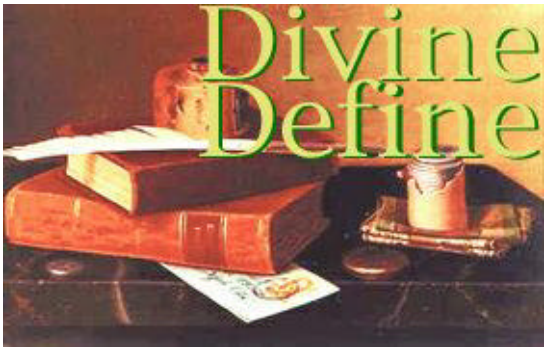

Matter
Earth
Cells
Heredity
Classify

Chromosomes, are a special type of protein called a "Nucleic Acid." They are located in the nucleus of a cell, and provide the code to make protein which will build, repair, or reproduce any cell within a living organism. In humans there are **23 pairs** of chromosomes, or **46 single** chromosomes in all cells of the body except the sex cells.

Autosomes are regular body cells**,** reproduce using **Mitosis**, or asexual reproduction. 1 cell becomes 2 new cells.

Gamete cells the sex cells reproduce using **Meiosis** or sexual reproduction. 1 cell becomes 4 new cells. What does a Chromosome look like? What does a Chromosome Pair look like?

Genes are the smallest chemical parts that form segments of chromosomes. Genes determine what we look like. There are not two organisms alike in the world unless you are an identical twin or a clone.

Alleles are an alternate form of a gene for one trait. E.g. Brown and blue eyes are two different alleles for eye color. We have 2 alleles for any, one trait, one from our mother and one from our father. They may be the same form of the gene or two different forms.

Genotype is the actual code that these alleles or genes possess (E.g. Tt or TT or tt). The gene may or may not be expressed when you observe a living organism.

Phenotype is the expressed appearance of a living organism. (E.g. Brown eyes, green eyes, freckles). The Phenotype expression will be due to genes that are dominant or overpower the other alleles that are not expressed.

Recessive alleles not expressed in the phenotype.

Dominant, the expressed allele in the phenotype.

Recessive gene traits:
You may carry the recessive gene for being an Albino, but because you also have the dominant gene for pigmentation (colored) all of your body cells are colored.
Other examples of alleles you may have that you don't express (recessive) are: non-tongue rolling, shortfingeredness, atavism (extreme hair growth), "sickle shaped" red blood cell (poor oxygen carrier - but fights malaria caused by Plasmodium larva from mosquito), and lack of dimples (dimples are dominant). Why would it be an advantage to have "Sickle cell" anemia if you lived in the tropics? Could this also be a disadvantage?

Dominant gene traits:
The opposite or dominant alleles that you most likely possess to these traits are tongue rolling, normal finger length, normal Red Blood Shape.
Some rather sad cases of dominant alleles, that fortunately few people have had historically are: **Huntington's Chorea** (causes uncontrollable twisting of face and limbs--about age 40) which has been traced to 3 Dutch immigrants that came to Salem, Massachusetts (1650). Their dominant alleles sadly led to the Salem Witch Trials. **Marfans Syndrome** which causes weakened ligaments/connective tissue, and can lead to heart failure as with Flow Hyman, and Pistil Pete Merevich ("NBA" player). Abraham Lincoln is suspected to have had this disease. Use your computer to research more on Marfan's Syndrome, Huntington's Chorea.

Can behavior be passed on genetically?

Are there genetic diseases you could pass on to your offspring?

Describe how genetics can be used to identify a person who is dead?

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